

# Oracle Collaboration Suite

## Technical White Paper

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## Executive summary

The ability to conduct business over many different communication channels holds the promise of faster and more flexible interaction with customers, partners and employees. Accepting the challenge requires integrated communications systems based on a common technology infrastructure. Only Oracle can satisfy this demand by offering integrated email, voicemail, phone, fax, scheduling, calendaring, and file management in a single product.

Oracle Collaboration Suite is enterprise-level solution that enables communication between individuals and teams, manages the content they create, and provides administrative support to simplify operations. Oracle Collaboration Suite supplies email, voicemail, calendaring, file services, and integrated search capabilities along with the ability to access this information from any type of interface (standard desktop clients, file protocols, web, wireless and telephone). Using the highly scalable and reliable Oracle9i Database as the foundation, and the Oracle9i Application Server, the Oracle Collaboration Suite is the answer for enterprises challenged by reliable management of this unstructured data.

## An Integrated Platform for Communications

Consider the following typical scenario:

- A sales consultant receives an urgent voicemail from his Account Manager that a competitor is planning to present to the CIO of his biggest account tomorrow. This could threaten the AM's plans to sign a contract with the customer next week. He asks the SC to set up a meeting to discuss competitive intelligence.
- The SC searches across all of the corporate databases and internal web sites for competitive intelligence, creates a report and loads it into the common repository.
- The SC then checks the calendar for all concerned, schedules a meeting and sends alerts with a URL for the competitive intelligence report.
- All of the meeting participants receive voice alerts and check their email through a browser, cell phone or PDA.
- They all request to receive the report on different devices, including fax, browser and PDA.
- All review the report and join the meeting to discuss an approach.

How long does it take to play out this scenario in your organization?

How many different logins and searches are required to gather the intelligence?

How many schedules do you need to check through phone calls, email and different calendars? And then do it all over again to schedule the meeting and alert the participants?

How many interactions does it take to deliver a report over fax, email and PDA?

How many interfaces, passwords, directories and device specific requests are involved?

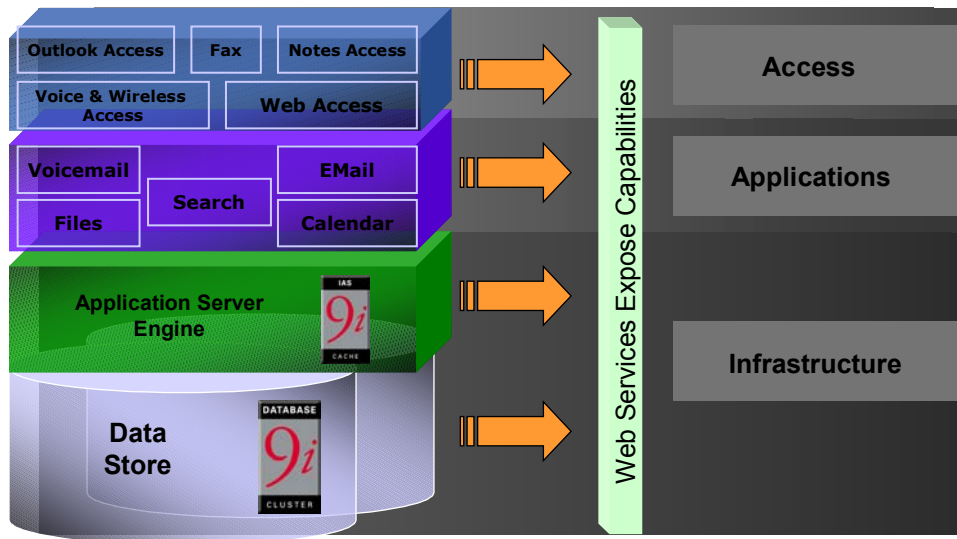
*Did you get to the CIO in time?*

Oracle believes that you should only need one interface, one password, one search and one directory to respond to this scenario. *We believe that you should get to the CIO in time.* Not only do we believe that you should be able to respond to this in a matter of minutes or hours, but we believe that the communications should be fast, reliable and secure no matter how many users you support or how many devices are involved.

This requires a new approach to technology infrastructure. It requires a common platform that integrates the services required to be successful in today's business market; there is no longer any time to be concerned with interfaces, passwords or device specific protocols. The vision of the Oracle Collaboration Suite is to allow you to focus on communication and push the details of how you do it into the background.

The solution to this problem is based on a common technical architecture that cuts across all of the required services. Oracle Collaboration Suite provides a single platform for content, a middle tier with common applications and access anytime, anywhere, from any device.

### Oracle Communications Suite Architecture



The Oracle Collaboration Suite is a content platform for:

- Mail
- Calendar
- Voicemail
- Files

It provides common services for:

- Search and retrieval
- Scheduling and Alerts
- Directory Services
- Single Sign-on
- Authentication
- System Administration (OEM)

It enables communication from any device:

- Web
- Wireless
- Voice
- Fax

As the integrated platform evolves, it will incorporate applications for instant messaging and web conferencing, as well as exposing system capabilities through Web Services. In addition to the extensive API's that are available with the Oracle9i Application Server, Oracle Collaboration Suite will provide its own set of API's to support customization and extensions.

## **The Oracle Collaboration Suite Content Platform**

The Oracle Collaboration Suite leverages a runtime version of the Oracle9i Database to store and manage email, calendar, and file content. Since all content is stored and managed in the database, the customer benefits from the security, reliability, and scalability that is Oracle's hallmark. Access to content is provided through a variety of integrated Collaboration Suite components, as described below.

### ***Responding to the challenge of Mail***

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Effective person-to-person communication, both within and between organizations, is fundamental to the global economy. When direct communications are not possible or practical, people and organizations today often turn to email. In addition, many organizations leverage email services to automate business processes, using email to deliver workflow information and enable application-to-application communication.

Having an easy to use, reliable, and cost-effective communications infrastructure is arguably the backbone of an organization, and yet many organizations are frustrated by the complexity and cost associated with acquiring, managing, and delivering these services.

## Features

The Oracle Email component of the Oracle Collaboration Suite leverages the Oracle9i Database to store messages in a secure, reliable, and scalable manner, and the Oracle9i Application Server to deliver services accessible to a broad range of access devices.

Among Oracle Email's features:

- Standards compliant:
  - o Multipurpose Internet Mail Extension (MIME)
  - o Extended Simple Mail Transport Protocol (ESMTP)
  - o Internet Messaging Access Protocol version 4 (IMAP4)
  - o Post Office Protocol version 3 (POP3)
  - o Secure Sockets Layer (SSL), also IMAP4 SSL and POP3 SSL
- Support for multiple access clients (i.e.: telephone hand set, web browser, cell phone) and integration between access channels. This means that if a user "listens" to an email message via their phone, it is marked as having been read when they access their email via a fat client.
- Server-level filters can be leveraged to automatically act upon messages based on message content. For example, messages sent to an "ask an expert" account can be passed to the Oracle Text engine and forwarded to a particular subject matter expert, depending on the content of the original message. Server-side filters can also be used to check all incoming or outgoing messages for characteristics associated with viruses.
- Supports multiple domains with a single server. For extremely large domains, supports a single domain across multiple nodes.
- Message store access services are built on a multithreading, load balancing, and connection sharing architecture capable of supporting thousands of simultaneous users on inexpensive hardware.
- Sophisticated housekeeping services manage the dynamic nature of messages (i.e.: high volume of adds and deletes) and provide a means to move messages that are old and/or not often referred to or acted upon to a "tertiary" tablespace, which can be located on less expensive disks.

## ***Responding to the challenge of Calendars and Scheduling***

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A large part of the corporate communications infrastructure requires scheduling. Setting meeting times and reserving shared resources are complicated tasks, which could be eased by using familiar tools such as Microsoft Outlook Calendar. A calendar also provides context to communications events and content needed for them, or created by them. The ability to drive events such as scheduling or distribution of information needed for a specific meeting, off of one's calendar, delivers on the promise of contextual information management.

## Features

Oracle Calendar offers access through a choice of web clients with Personal Information Management (PIM) and full group scheduling features, through desktop clients available on various platforms, over the wireless Internet via WAP or i-Mode, through Short

Message Service (SMS), and full synchronization with a range of Personal Digital Assistants (PDA's). Oracle Calendar users can also continue to manage their appointments through an Outlook Calendar client with virtually no change in functionality using Oracle Calendar's OutlookConnector which contains its own configuration wizard. Users can self-configure the OutlookConnector with minimal information (IMAP, SMTP, and Calendar server names, user name and password) or the OutlookConnector can be pre-configured for well known corporate environments in which case, only user name and password is required.

The OutlookConnector allows Outlook to use MAPI calls and transforms them into IMAP / SMTP for mail and Calendar calls to the calendar server. This interface requires no change to the Oracle Email IMAP or SMTP agents. Oracle Calendar's OutlookConnector queries the Oracle IMAP server for folder hierarchies and email messages, and converts the information into MAPI properties for display in Outlook. Similarly, the OutlookConnector queries the calendar server for meetings, events, tasks, contacts, notes and journals, which it also converts into MAPI properties. With this model, the OutlookConnector builds a user's Inbox from two separate information sources, taking mail from the Oracle IMAP server and calendar information from the calendar server.

## ***Responding to the challenge of Voicemail and Fax***

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Voicemail has become a ubiquitous means of communication when people cannot be reached immediately on the telephone. Voicemail and email are generally thought of as very different types of messages. In the past, organizations were forced to purchase email, voicemail, and facsimiles services from separate vendors and administer them as standalone services. The Oracle Collaboration Suite packages these services into a unified communication offering.

### **Features**

Oracle Collaboration Suite combines electronic mail, voicemail, and facsimile services into a single, highly scalable and reliable "inbox." Oracle Voicemail leverages the data world to provide scalable, reliable, voicemail and inbound fax capabilities. Voicemail and fax applications are built on standard interfaces while the messages are stored in the industry leading Oracle9i Database (voicemails are stored as .wav files and faxes are stored as .tif files). Support for Enterprise Computer Telephony Forum (ECTF) standards, collectively known as "CT Server", allow Oracle Voicemail to easily integrate with a variety of enterprise and carrier class switches. Oracle Voicemail delivers the full power of Oracle9i Database's multithreaded database to provide parallel processing, high availability, and rapid response time for thousands of simultaneous users in distributed locations. The Oracle Voicemail component of Oracle Collaboration Suite features:

- DTMF Voicemail user interface
- Inbound Fax support
- Multi-Channel Access to Messages

- Telephone System Integration
- Flexible Deployment Options
- Open Standards Hardware and Software support

## ***Responding to the challenge of File Management***

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Efficient collaboration between employees requires a common platform for storing, managing and controlling access to the content that drives their business. Oracle Files uses Oracle database technology to create a common repository to structure business content in ways that reflect their needs. It provides the best of both the traditional file system and database worlds. Not only does it have the scalability and reliability of the Oracle9i Database; it has the familiarity and ease of use of a file system.

From the end user's standpoint, Oracle Files is accessible through a web browser, Web folders, or a number of different client applications such as FTP, NFS, SMB, AFP. However, unlike other file systems, Oracle Files stores all content, from web pages to MP3, from spreadsheets to XML files, in the same file system on one single instance of an Oracle database.

### **Features**

- *Workspace Organization.* Workspaces are used to structure content based on business use, and authorize who has access to them.
- *Categories.* Categories provide another level of organization by allowing the administrator to define additional metadata (extended attributes) for files. A category defines a set of attributes that users apply to files. Categories are not associated with any particular type of content. You can apply the same category to word processing, image, presentation, spreadsheet, or any other type of file stored on your Oracle Files server. Users can search for and locate their information based on the category.
- *Workflow.* Oracle Files provides workflow support, enabling you to define business rules that notify users of changes to files and route them to the appropriate people for approval.
- *File Versioning.* Versioning allows users to manage changes to files without losing older copies.
- *Authorization.* Files provides role based security with three built-in profiles:
  - **Administrator** An administrator maintains the users and their access within a workspace. Administrators can create users, rename users, and delete users.
  - **Participant** A participant is able to view and modify files in a workspace.
  - **Viewer** A viewer has read-only access to files in a workspace.
- *File Sync.* File synchronization ensures that one or more local folders on users local computers are the same as one or more remote folders in Oracle Files. Users can edit, modify, and even delete files. Changes that users make on their local computer or on the host computer are both updated during file synchronization.

- *Locking.* To prevent users from overwriting each other's work, three types of file locking are supported:
  - Automated locking through work flow
  - WebDAV standards compliant
  - Manual locks by users
- *Trash.* Deleted files are moved to a trash folder from where they can be restored later it needed or emptied into an archive.
- *Single File Restore.* When users empty their trash folders trash is archived outside the database for a defined amount of time. The administrator controls the archive and can restore previously deleted files upon request from users.

## Common Services

All of the services of Oracle Collaboration Suite are delivered to your desktop with a common interface. The services also take advantage of a common technical architecture to simplify searching for different types of content, directory and authentication, single sign-on, and system administration. A runtime version of the Oracle9i Application Server is used to support the technical infrastructure so there is continuity throughout the Oracle Collaboration Suite and other Oracle applications.

### Search

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Corporate information is only data unless you can find it easily. Proliferation of information across hundreds of databases and corporate intranets is causing a crisis in many businesses, even though they may each have their own built-in search and retrieval technologies. If you want to make a decision quickly you need intelligence. The search component supplied with the Oracle Collaboration Suite transforms data into intelligence. Known as Ultra Search, it can be used to search across other Collaboration Server components, corporate Web servers, databases, mail servers, file servers and Oracle9iAS Portal instances.

Ultra Search is based on Oracle 9i Text technology and is an out-of-the box solution that requires no SQL coding. It uses a "crawler" to index documents; the documents stay in their own repositories, and the crawled information is used to build an index that stays within your firewall in an Oracle9i Database. Ultra Search locates the appropriate content assets without the need for rearchitecting IT topologies, compromising security or programming against hard-to-use API's.

### Features

- Searches text across Oracle databases, other ODBS compliant databases, IMAP mail servers, HTML Web pages, and files – and organizes and categorizes the content.
- Provides the best relevance ranking and globalization support in the industry.

- Provides value added Portal functionality, including crawling, fielded search and metadata extraction.
- Presents a Web-style interface where users can specify complex search patterns using boolean terms.
- Built-in expertise with Oracle text that translates and tunes web-style queries into the underlying SQL-based queries.
- Delegation of user authentication to single-signon server.
- Ultrasearch API's support complex search patterns that incorporate full Oracle text and metadata search, in addition to a JAVA email API for archived mail.

## ***Single Sign-on, Common Directory and Authentication***

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One of the most time consuming and aggravating experiences that result from communicating over multiple channels is the need to login to multiple systems, keep track of different passwords and establish profiles in more than one application. It is also a complex challenge for the administrators of these systems to ensure that the content being accessed is secure and users are authenticated. The Oracle Collaboration Suite takes advantage of Oracle Internet Directory to provide a centralized user repository for all of the services it provides. This streamlines the user experience, enables single sign-on capability and simplifies authentication.

## **Anytime, Anywhere, Any Device – In context**

Wireless and Voice are channels by which Oracle Collaboration Suite provides access to email, calendar, files, directory, and address book and enhances interactive communications through instant messaging, a collaborative alert engine and presence management.

### **Email Interaction**

- Receive, Reply to, Forward, or Move email using a mobile browser or voice interface
- Play the summary of new email with voice access
- Create a virtual inbox based upon selected preferences, and select a particular Inbox view to be access from the mobile browser or voice access (e.g., provide email from select senders, email marked urgent, or all email from the last selected number of hours)

### **Calendar Interaction**

- Manage appointments and tasks from any mobile browser
- Play the summary of appointments with voice access

## **Files Interaction**

- Integration with Oracle Files to enable file attachment
- Integration with Right Fax to enable document printing by fax
- Select a file as an attachment for email or faxing

## **Directory**

- Access to corporate directory from any mobile browser
- Select email recipients from the corporate directory

## **Address Book**

- Manage individualized contact information
- Call function from the address book
- Select email recipients from the address book
- Add contacts to address book from the email message

## **Instant Messaging**

- Integration with the Jabber Instant Messaging Server enables communication with other instant messaging providers

## **Collaborative Alert Engine**

- Alerts can be sent to any devices via SMS message, email, instant messaging, or voice access
- The Alert Engine and Customization Service provides the ability to send data from any source to any device based upon defined events
- The Messaging engine supports multi-threading and multiple providers thereby suspending the reliance upon a single provider to provide messaging services

## **Presence Management**

- Presence Management enables a users to define their location at a given time and an appropriate method for being contacted, based upon availability and personal preference.

## **Benefits of the Oracle Collaboration Suite**

### ***Increase Productivity***

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- Common interface for Mail, Calendars & Scheduling, File Management and Search
- Embrace and enhance current and future clients: Standards-based, MS Office, MS Outlook, Voice, Web & wireless
- Text-to-speech and Automated-speech-recognition. Query-able message storage. Allows for effective implementation of system-wide and individual rules, SPAM control, virus protection, etc.
- Find information quickly, and re-use content instead of recreating it.
- Reduce scheduled downtime with simplified administration, and minimize unscheduled downtime.

### ***Consolidate and simplify.***

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- Reduce total cost of ownership – software license, administration and hardware
- “Intelligent” message storage. Only one copy of a given message is stored in the database, even if it is destined for many accounts.
- Single platform for file management, eliminate redundant servers and duplicate files
- Centralized administration via Oracle Enterprise Manager. Scale at the Enterprise Level
- Based on the Oracle9i Database and Application Server
- Can be deployed using Oracle clustering technology? – extend use with inexpensive servers.
- The Oracle Success Story for Mail
  - From 97 Servers to Single Three-Way Cluster
  - 42,000 Employees
  - \$13M 1st Year Savings, \$11M Annually
  - Easier Administration
  - Improved Availability, Reliability and Security
  - Lowered Hardware Costs

### ***Ensure Availability and Security***

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- Common platform and tools for authentication
- Store all files and message content in a secure database
- Security and reliability through software, not servers, based on the Oracle 9i platform leading to superior email SPAM and virus protection.

- Oracle9i, Shared Disk – more reliable as you add computers

## ***Implementation Services***

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Implementing the Oracle Collaboration Suite can dramatically improve user access to communication services and reduce the infrastructure needed to support them. Leveraging Oracle Consulting to assist in this implementation enables you to achieve the business benefits of a consolidated communications platform faster and with reduced risk. By assisting with all phases of business and technology lifecycle planning, from evaluating your business case, to designing a consolidated communication architecture, we will help you implement a communications infrastructure that's effective for your business.

Oracle Collaboration Suite services are focused on assisting customers with the implementation of Oracle Collaboration Suite to rapidly achieve the benefits of an efficient, consolidated communication platform. Business advantages include more timely access to information, simplified use and management of communication options, and reduced cost of ownership of your communication assets. Oracle's consolidation services include:

- **Assessment** - of your current Files, Email, Voicemail, Fax, Search and Wireless infrastructure.
- **Architecture** - using Oracle's proven methodology for recommended progression of communication channel consolidation and integration.
- **Migration and Implementation** – utilizing robust migration tools and experience you can trust.

## **Summary**

Information is moving at a faster pace and there are increasingly more communication channels to manage. To handle this rapid growth and better manage these important communication channels, businesses are demanding integrated communications systems based on a common technology infrastructure. Only Oracle can satisfy this demand by offering integrated email, voicemail, phone, fax, scheduling, calendaring, meeting management, file management and more in a single product.

Oracle Collaboration Suite enables you to locate people and communicate to them in a variety of mediums, at times convenient for all parties, while managing all the information you need to make your communication more efficient. Oracle Collaboration Suite eases user administration of email, voicemail and fax by providing one integrated message store with one centralized inbox. It provides voice access to your calendar allowing you to review your schedule and receive alerts when new meetings are created or existing meetings changed. Files are managed from a common repository that

eliminates duplication provides a broad range of tools. Users access all the information they need to communicate effectively with a single user id and password. In addition, Oracle allows users to easily search across all enterprise information repositories regardless of where the information is located. And, Oracle Collaboration Suite integrates with familiar desktop clients and interfaces like Microsoft Outlook and Explorer so no end user training is needed.